Lake similar to that found at present above the tree-line in the open ericaceous belt. This indicates a 1,000–1,100-m downward shift of this vegetation and a probable drop in temperature of about 8° C in this high mountain area, if the temperature calculation method for the equatorial Andean Mountains is applied[2].

A deeper core has since been made at Sacred Lake. Judging by the age of the deepest level, namely 33,350 ± 1,000 B.P. (GrN-4194), the total core probably represents the period from before the Paudorf interstadial of the Interpleniglacial of Europe to the present time.

J. A. COETZEE

Palynological Research,
University of the Orange Free State,
Bloemfontein,
South Africa.

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Relationship of Palæomagnetic Reversals and Micropalæontology in Two Late Cænozoic Cores from the Pacific Ocean

RECENT investigation has revealed palæomagnetic reversals preserved in the clayey radiolarian ooze of two deep-sea cores from the equatorial Pacific Ocean. The cores are:

MSN 12*G*; position 3° 01′ N., 174° 02′ W.; depth, 5,230 m.

MSN 142*G*; position 5° 20′ N., 146° 13′ W., depth, 5,089 m.

The cores are illustrated, their lithologies briefly described, and Radiolaria listed by Riedel and Funnell[1].

Palæomagnetism. The uppermost parts of both cores are thought to be normally magnetized with respect to the present Earth's field. As the cores come from equatorial positions and were not orientated on collection it is not possible to be certain that this is so. There is, however, no evidence of erosion or non-deposition at or near the tops of either sequence. The first reversal occurs in *MSN* 12*G* between 74 and 95 cm, and in *MSN* 142*G* between 78 and 87 cm. Other reversals occur below these levels in both cores. Assuming that the uppermost magnetic vector is normal, the magnetization of the cores is as follows:

MSN 12*G*; 6–74 cm (N, 5 samples), 95–116 cm (*R*, 7 samples), 119, 123 cm (N), 133 cm (*R*), 135 cm (N), 138–146 cm (*R*, 7 samples).

MSN 142*G*; 15–78 cm (N, 8 samples), 87–107 cm (*R*, 3 samples), 116, 125 cm (N), 134, 142 cm (*R*).

The palæomagnetic results below the first reversed zone (*R*1) do not seem to be consistent with the hypothesis that reversals of the Earth's magnetic field have occurred about every million years, unless extremely slow ratios of deposition are assumed for the lower portions of these cores. However, recent results from continental rocks[2–5] are also inconsistent with this hypothesis, and it seems likely that below the *R*1 zone reversals occurred more rapidly than was formerly suggested.

Micropalæontology. In *MSN* 12*G*, Radiolaria between 0 and 43 cm are similar to Recent assemblages and indicate a Quaternary age. Specimens of *Pterocanium prismatium* occur rarely at 90–92 cm, and commonly from 127 cm to the bottom of the core. Some re-worked Eocene, Miocene and possibly Oligocene forms are present throughout. In *MSN* 142*G*, a Quaternary age is indicated by the Radiolaria between 0 and 76 cm, but from 94 cm to the bottom of the core *Pterocanium prismatium* is rather common. In this core some re-worked Miocene forms are present throughout.

In both cores examined the first reversal appears to correspond more or less exactly with the upper limit of occurrence of *Pterocanium prismatium*. Lithologically there does not seem to be any break in accumulation at this level in *MSN* 12*G*, which consists throughout of a vaguely mottled, brown clayey siliceous ooze, but in *MSN* 142*G* there is a burrow-mottled gradation, between buff or brown ooze above and grey-brown ooze below. at approximately 85 cm.

In recent investigations of the palæomagnetic polarity of basalts from the continents and oceanic islands, normal magnetization has been found to characterize all rocks up to 0·98 m.y. B.P., prior to which a period of reversed magnetism (*R*1) is found extending back to 1·9 m.y.[2–5]. The reversal at 0·98/0·99 m.y. would appear to fall within the Quaternary, as defined in accordance with the recommendations of the International Geological Congress 1948 (refs. 4 and 6). If, as seems most likely, the first reversal recorded in the cores corresponds to that found on land, an intra-Quaternary age of 0·98/0·99 m.y. is implied for the level of the reversal in the cores.

The upper limit of occurrence of *Pterocanium prismatium* has hitherto been regarded as approximating to the Tertiary–Quaternary boundary[1,7]. In the Pacific it corresponds rather closely with the disappearance of *Discoaster* spp. from the calcareous nannoplankton, a phenomenon which has also been attributed to the Tertiary–Quaternary boundary in the Atlantic[8].

The association of a first magnetic reversal with the upper limit of occurrence of *Pterocanium prismatium* in the two Pacific cores suggests that this level has an age of very slightly less than 1 m.y. and that it is intra-Quaternary in terms of current stratigraphical definitions.

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C. G. A. HARRISON

Scripps Institution of Oceanography,
University of California, San Diego,
and
Department of Geodesy and Geophysics,
University of Cambridge.

B. M. FUNNELL

Department of Geology,
University of Cambridge.

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New Species of *Schizaea* Spore from the Upper Mesozoic of Kashmir, India

DURING the study of samples collected from Wakkachu Traverse, Ladhak District, Jammu and Kashmir, I obtained a new type of striated bean-shaped spore belonging to the family Schizaeaceae together with a number of other spores and pollen grains having an upper Mesozoic affinity. The detailed results of this work will be published elsewhere. The samples were crushed and treated with hydrofluoric acid followed by concentrated nitric acid and hydrogen peroxide solution. The polyspores were separated by a heavy liquid (specific gravity, 2·3) and mounted in glycerine jelly.

The spore is large, bilateral and bean-shaped; monolete, laesura long; exine sculptured with unbranched broad striations. Striations 4μ thick are spaced about 3·5–4μ